

PREDICT Outbreak Rapid Report

Today's Date: February 1, 2017

Cumulative day of the outbreak investigation: 19

Working Title of Investigation: *Crow_dieoff_Bangladesh_Dhaka_2017*

Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife):

On 14th January, the PREDICT field team (team members who were not directly involved in investigating the crow die-off in Rajshahi) was sampling bats and observed unusual mortality of crows (*Corvus splendens*) on the premises of Mohakhali Wireless, Dhaka City. The team observed the crows suddenly falling from trees; and clinical signs of: circling, inability to fly, lethargy, torticollis, tremors, and diarrhea. No history or clinical signs were reported or noted in other domesticated animals or people.

Location	
Country:	Bangladesh
District:	Dhaka (This is 245km from Rajshahi)
Village/Town:	Dhaka city: Wireless Mohakhali, Ramna Park, Sohrawardi uddan, Dhaka University, and Modumoti Model Town
GPS Coordinates (if known):	<i>Mohakhali Wireless</i> N23 47.010 E90 24.289 <i>Ramna Park:</i> N23 44.347 E90 23.969 <i>Dhaka University:</i> N23 44.087 E90 23.499
Date that first case(s) of illness occurred (if known or estimate):	January 14, 2017
Date that PREDICT was first notified of outbreak:	January 14, 2017

Key Information	Description of Findings/Actions/Outcomes
How many affected individuals?	Human: Suspected <u>0</u> Confirmed <u>0</u> Deaths <u>0</u> Domestic animal: Suspected <u>0</u> Confirmed <u>0</u> Deaths <u>0</u> Wild animal: Suspected <u>148</u> Confirmed <u>0</u> Deaths <u>148</u>
How was outbreak first noticed?	The PREDICT-2 team was conducting routine bat sampling in Dhaka. On January 14, 2017, Country Coordinator, Dr. Ariful Islam, reported observing 4 sick or dying crows on the premises of a telecommunications company where PREDICT was also conducting bat sampling. The Country Coordinator notified the Director of the Institute of Epidemiology, Disease Control & Research (IEDCR) about a second crow die-off (<i>see also PREDICT's report on</i>

	<p><i>the concurrent Rajshahi outbreak</i>) on the premises of the telecommunication company, Mohakhali Wireless. The Director of IEDCR then informally and verbally requested the PREDICT-2 team to extend their Rajshahi outbreak response efforts to also investigate the crow die-off in Dhaka. When asked, local residents stated that the crow die-off had started in the beginning of January.</p> <p>IEDCR expressed interest in understanding the geographical distribution, cause and extent of this outbreak and find any epidemiological links between these two outbreak sites (Dhaka and Rajshahi).</p>
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	<p>The crow die-off was first observed at Mohakhali wireless. An additional 4 crow roosts were observed by the PREDICT team that also had evidence of crow morbidity and mortality approximately 7km from Mohakhali at Ramna Park, Suhrawardy Uddan, Modumoti Model Town and Dhaka University. The team searched Dhaka city for other crow roosts and observed apparently healthy crows at 7 additional roosts. Discussions with local residents and additional field observations indicated there was no further evidence of crow mortality events or unusual illness at these other roosts.</p>
Has the country requested support from PREDICT (include date of request)?	<p>The Director of IEDCR requested PREDICT's support in this outbreak on January 14, 2017, as part of the official request for the ongoing Rajshahi outbreak. The director of IEDCR officially acknowledged the outbreak on January 15, 2017.</p>
If so, which government agency requested PREDICT support?	<p>Institute of Epidemiology, Disease Control and Research (IEDCR) and One Health Secretariat of Bangladesh under Ministry of Health and Family Welfare, Government of the people's Republic of Bangladesh.</p>
When was PREDICT response initiated (date)?	<p>January 14, 2017</p>
Are other EPT partners involved in the response (which ones and how)?	<p>On 18 January, IEDCR provided an update of the investigation at the National Influenza Technical Steering Committee coordination meeting. FAO and P&R were present. On the 25th, there was a second meeting to discuss the outbreak and FAO presented data from ongoing, routine live bird market (LBM) surveillance.</p>
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	<p>PREDICT was engaged at the start of outbreak response, since the team reported the unusual deaths and clinical signs. At IEDCR's request, the team immediately collected crow samples and provided technical advice to IEDCR. The team surveyed nearby crow roosts (within 7 km) and found 4 additional sites where crows had clinical signs and mortality. The PREDICT team visited 14 live bird markets and sampled poultry offal. These markets are in Dhaka close to the outbreak site and are not under routine surveillance by FAO. PREDICT conducted wild bird and feral dog sampling; environmental crow and poultry fecal sample collection; qualitative interviews; transported personnel; transported samples from the field to the PREDICT lab at icddr,b and the DLS National Laboratory – The Central Disease Investigation Laboratory (CDIL). Diagnostic analyses are being conducted by the Ministry of Livestock and Fisheries reference lab as well as the reference lab at the Bangladesh Livestock Research Institute (BLRI) and icddr,b.</p> <p>The PREDICT team included Dr. Ariful Islam, PREDICT-2 country coordinator; one veterinary research officer; one anthropologist; one field research assistant; and two field technicians who have wildlife expertise. At icddr,b, lab testing was overseen by PREDICT Bangladesh lab lead, Dr. Zia Rahman and conducted by 2 research officers.</p>

<p>When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)?</p> <p>When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?</p>	<p>The Director Institute of Epidemiology, Disease Control & Research (IEDCR) first officially acknowledged the crow die-off on January 15, 2017.</p> <p>The response was initiated by the Director of IEDCR on January 14, 2017. In this outbreak response, the Ministry of Health & Family Welfare, Ministry of Forest and Environment, and Ministry of Fisheries and Livestock were each involved as part of the Government of Bangladesh response. icddr,b was involved as a PREDICT lab partner to support preliminary sample testing. For the Dhaka crow die-off investigation, the Bangladesh Livestock Research Institute (BLRI) and the Central Diagnostic Investigation Laboratory (CDIL) serve as official reference labs (under Ministry of Fisheries and Livestock) and are performing confirmatory testing for a subset of samples screened at icddr,b. BLRI and CDIL will report the official laboratory results on behalf of the Government of Bangladesh, once diagnostic testing is completed. Prof. Dr. Meerjady Sabrina Flora, Director, IEDCR is in charge of the national response.</p>																					
<p>Was the cause of the outbreak confirmed by a laboratory?</p> <p>If so, give details, including cause, species, specimen types tested and dates of testing if known.</p>	<p>The etiology of outbreak was preliminarily identified by laboratory testing, and confirmatory testing is on-going.</p> <p>Note: The PREDICT team has been actively sampling sick or dead crows in Dhaka from Jan 14th, and the outbreak remains active. Below is a detailed daily summary of PREDICT field activities and samples submitted to lab partners for analysis.</p>																					
<p>Where was the laboratory testing performed (name of laboratory)?</p>	icddr,b, Bangladesh Livestock Research Institute(BLRI), and Central Disease Investigation laboratory (CDIL)																					
<p>Number of days between initiation of government response and lab confirmation of laboratory results.</p>	Confirmed diagnostic results from the Government of Bangladesh have not been released.																					
<p>Summary of the Outbreak:</p>	<p><u>To be filled after active outbreak activity has ceased</u></p>																					
<p>Working name of the outbreak (e.g., Yellow Fever - DRC)</p>	Crow die-off Dhaka																					
<p>Total number of cases:</p>	<table><tr><td>Human:</td><td>Suspected</td><td><u>0</u></td><td>Confirmed</td><td><u>0</u></td><td>Deaths</td><td><u>0</u></td></tr><tr><td>Domestic animal:</td><td>Suspected</td><td><u>0</u></td><td>Confirmed</td><td><u>0</u></td><td>Deaths</td><td><u>0</u></td></tr><tr><td>Wild animal:</td><td>Suspected</td><td><u>148</u></td><td>Confirmed</td><td><u>0</u></td><td>Deaths</td><td><u>148</u></td></tr></table>	Human:	Suspected	<u>0</u>	Confirmed	<u>0</u>	Deaths	<u>0</u>	Domestic animal:	Suspected	<u>0</u>	Confirmed	<u>0</u>	Deaths	<u>0</u>	Wild animal:	Suspected	<u>148</u>	Confirmed	<u>0</u>	Deaths	<u>148</u>
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<p>Summary of PREDICT Team response activities during the outbreak.</p>	<p>Since January 14, 2017, after receiving a verbal request from the Director of IEDCR (the official acknowledgement of the die-off was on the 15th of January), the PREDICT team has been continuing its field investigations and has sampled more than 130 crows and collected 81 live bird market environmental samples, 40 poultry offal samples, 6 feral dog samples and captured 13 wild birds that are co-roosting with crows (species ID pending). We submitted all the samples to icddr,b lab and a subset of samples were submitted to BLRI for confirmatory testing. Additional testing and laboratory systems strengthening also ongoing at CDIL.</p> <p>The qualitative team performed their observational and informal interviews in the outbreak area, live bird markets and poultry farms. The PREDICT team has continued to sample wild crows, as of January 31st, at three of the sites with ongoing crow mortality: Wireless Mohakhali, Ramna Park,</p>																					

	Sohrawardi uddan. The anthropology team has one more field site visit and then then will finalize their report. Laboratory diagnostics are ongoing.
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PREDICT Response Timeline

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Key Events:

Date	Day #	Notification or Action Taken
January 14, 2017 (See Rajshahi report)	1	First notification of unusual disease activity by PREDICT team CC notification to PREDICT lead partner
January 14, 2017	1	Unofficial request from the government for the PREDICT team
January 14, 2017	1	First deployment of PREDICT teams to outbreak field site – PREDICT team was already deployed to the site sampling bats
January 14, 2017	1	First specimen collection
January 14, 2017	1	First specimens delivered to laboratory
January 15, 2017	2	Invitation to assist from government received by PREDICT team
January 15, 2017	2	First Outbreak Taskforce meeting attended by PREDICT CC or PREDICT team members
January 15, 2017	2	First samples (12 oral and cloacal swab samples in VTM) collected from 6 crows and submitted to icddr,b laboratory and preliminary testing completed. These samples were screened by real time PCR for the M gene, H5, H7, and H9. The preliminary results were sent to IEDCR on same day.
January 16, 2017	3	First report of preliminary results to government (Department of Livestock Services and the Forest Dept.) and taskforce by IEDCR
January 18, 2017	5	Additional samples from 27 crows submitted for testing to both icddr,b and BLRI for testing
January 22, 2017	9	Additional preliminary testing completed at icddr,b for confirmation at BLRI; supplemental testing methods begun on Predict-collected samples at Central Disease Investigation Laboratory (CDIL) supporting larger lab system
January 26, 2017	13	PREDICT submitted an additional 165 samples consisting of 78 crow samples (cloacal and oropharyngeal), 41 poultry offal samples (from the 14 live bird markets), 40 environmental fecal samples and 6 feral dog samples to the PREDICT lab at icddr,b.
January 30, 2017	17	<p>PREDICT's anthropologist performed observational and informal interviews at one live bird market neighboring Mohakhali outbreak site. The team sampled 12 dead crows from two locations (7 from Mohakhali wireless, and 5 from Ramana Park) and safely packed and shipped carcasses to CDIL for safe disposal. 12 swab samples from the crows were shipped to icddr,b lab for testing.</p> <p>PREDICT team also found 7 new crow roosts with apparently healthy crows and no history of crow die-off according to local residents.</p> <p>The anthropology team has one more field site visit and then then will finalize their report.</p> <p>Additional biological sample and behavioral data collection by Predict (ongoing as usual Predict scope of work). Laboratory diagnostics are ongoing</p>
January 31, 2017	18	<p>PREDICT collected observational behavioral data and conducted informal interviews with vendors at a live bird market neighboring Ramna Park outbreak site.</p> <p>The team sampled 9 dead crows from two locations (7 from Mohakhali Wireless, and 2 from Ramna Park) and safely packed and shipped the carcasses to CDIL for disposal via incineration. Cloacal and oropharyngeal swab samples from 9 crows were shipped</p>

		<p>to icddr,b lab for preliminary testing. Laboratory diagnostics are ongoing.</p> <p>The PREDICT team identified 5 additional crow roosts with apparently healthy crows and no history of recent crow die-off according to local residents.</p>
February 1 st , 2017	19	<p>PREDICT collected observational behavioral data and conducted informal interviews with vendors at a live bird market neighboring Sohrawardi Uddan outbreak site.</p> <p>The team sampled 8 dead crows from three locations (6 from Mohakhali Wireless, 1 Sohrawardi Uddan and 1 from Ramna Park) and safely packed and shipped the carcasses to CDIL for disposal via incineration. Cloacal and oropharyngeal swab samples collected from the 8 crows were shipped to icddr,b lab for preliminary testing. Laboratory diagnostics are ongoing.</p> <p>The PREDICT team identified three additional crow roosts with apparently healthy crows and no history of recent crow die-off according to local residents.</p> <p>A regular meeting of all USAID Mission partners, including PREDICT, will take place on February 6, 2017. The Mission Director will be updated on all PREDICT-2 activities as well as on PREDICT's engagement with the Government of Bangladesh in the investigation of the crow die-off.</p> <p>The PREDICT Country Coordinator updated P&R, FAO, CDIL, IEDCR regarding recent activities.</p>
PENDING		First notification to USAID of government cleared confirmatory laboratory results